

Attorney Docket No. AFFY-003/26US Application No. 10/694,541

Page 1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Stephen A. FODOR et al.

Application No.: 10/694,541 Group Art Unit: 1634

Filed: October 28, 2003 Examiner: Jeanine A. Goldberg

For: Arrays for Detecting Nucleic Acids

Commissioner for Patents
U.S. Patent and Trademark Office
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401 Dulany Street
Alexandria, VA 22314

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97(c)

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56,

Applicant(s) hereby submits the following information in conformance with 37 C.F.R. §§1.97 and 1.98.

- Pursuant to 37 C.F.R. §1.98, copies of documents 50-61, 64-71, 74, 78, 80, 81 and 86-94 cited in the attached Form PTO-1449 are enclosed.
- [x] Copies of the remaining publications listed on the attached Form PTO-1449 are not being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial Nos.:

09/768,626, filed January 25, 2001 (now US Patent No. 6,576,424);

09/670,563, filed September 27, 2000 (now US Patent No. 6,451,536);

09/362,089, filed July 28, 1999 (now US Patent No. 6,440,667);

09/056,927, filed April 8, 1998 (now US Patent No. 6,197,506);

08/670,118, filed June 25, 1996 (now US Patent No. 5,800,992);

08/168,904, filed December 15, 1993 (now abandoned);

07/624,114, filed December 6, 1990 (now abandoned); and

07/362,901, filed December 7, 1989 (now abandoned)

to which the above-identified application claims priority under 35 U.S.C. §120.

[x] Copies of documents that were not submitted in the above-mentioned related United States Patent Applications may be found in related United States Patent Application Nos.:

10/098,485, filed March 18, 2002; 09/585,557, filed June 2, 2000 (now US Patent No. 6,395,491); 09/585,556, filed June 2, 2000 (now US Patent No. 6,544,739); 09/585,659, filed June 2, 2000 (now US Patent No. 6,355,432); 09/054,420, filed April 3, 1998(now US Patent No. 5,925,525); 08/873,034, filed June 11, 1997(now US Patent No. 5,871,928); and 08/348,471, filed November 30, 1994 (now US Patent No. 6,420,169) Should the Examiner be unable to locate a document, a copy will be provided upon request.

[x]Applicants would also like to bring to the Examiner's attention information from Civil Action No. 04-901-JJF in the U.S. District Court for the District of Delaware. Applicants note that this civil action involves multiple patents, including U.S. Patent Nos. 6,355,432 and 6,646,243, owned by the assignee of this application, , and the action is stylized as Affymetrix v. Illumina. Certain non-patent references asserted by Illumina as relevant to the patentability of various involved Affymetrix patents and/or certain claims of the '432 and '243 patents, which claims are generally directed to collections of encoded beads which have binding polymers of different target specific sequence attached thereto or to substrates comprising beads, spheres or particles comprising nucleic acids attached thereto, have been provided in the attached Form 1449. Additionally, the following patent documents were also asserted by Illumina as relevant to the patentability of certain claims of the '432 and 243 patents: EP 392,546, 5,219,763, GB 1561042, 5,028,545, 5,219,763, 5,700,637, 4,877,965, CA 1248873 and 5,348,855, all of which have been cited herein or previously provided in Information Disclosure Statements.

Should the Examiner wish to review any documents in applicants' possession related to this action, the Examiner is invited to contact the undersigned and any documents requested will be forwarded.

[x] No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO-1449 are being provided in accordance with MPEP 609.04(a).

Page 3

[]	Publication(s) listed on the attached Form PTO-1449 were cited in a foreign search or examination report corresponding to application serial no and mailed on
[]	Enclosed is a copy of a non-English publication(s) Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).
[]	Enclosed is a copy of a non-English publication(s) English language publication (copy enclosed) claims priority from this non-English publication
[]	Enclosed is an explanation of non-English publication(s) for which an English translation is not available.
[]	Enclosed is an English translation of non-English publication(s)cited in the attached Form PTO/SB/08A.
[x]	The Examiner's attention is directed to related co-pending United States Patent Application Serial Nos.:
	10/098,485, filed March 18, 2002, cited herewith as US 2003/0104411;
	10/102,774, filed March 22, 2002, cited herewith as US 2002/0192684;
	10/102,915, filed March 22, 2002, cited herewith as US 2003/0003475;
	10/098,484, filed March 18, 2002, cited herewith as US 2003/0119011;
	10/125,428, filed April 19, 2002, cited herewith as US 2002/0155491;
	10/125,460, filed April 19, 2002, cited herewith as US 2002/0155492;
	10/125,530, filed April 19, 2002, cited herewith as US 2003/0017484;
	10/694,536, filed October 28, 2003, cited herewith as US 2004/0248147;
	10/993,432, filed November 22, 2004, cited herewith as US 2005/0112676;
	10/992,782, filed November 22, 2004, cited herewith as US 2005/0158743; and
	10/992,772, filed November 22, 2004, cited herewith as US 2005/0164249
	nformation Disclosure Statement is filed after the period specified in 37 C.F.R. § efore the mailing of:
	[x] a final action under 37 C.F.R. §1.113;
	[] a notice of allowance under 37 C.F.R. §1.311; or
	[] an action that otherwise closes prosecution in this application.
In acco	ordance with 37 C.F.R. §1.97(c) also enclosed is:
	[x] Fee under 37 C.F.R. §1.17(p) in the amount of \$180.00; or
	[] Statement as specified in 37 C.F.R. §1.97(e):

Page 4

[]	Each item of information contained in the Information Disclosure
	Statement cited herein was first cited in a communication from a
	foreign patent office in a counterpart foreign application not more
	than three months prior to the filing date of the Information
	Disclosure Statement; or

[] No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, having made a reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing date of the Information Disclosure Statement.

It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO-1449s to the undersigned. The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 50-1283.

Dated: June 12, 2006

USPTO Customer No. 000033522

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INFORMATION DISCLOSURE CITATION

Attorney Docket No. AFFY-003/26US **Application No.** 10/694,541

(Use several sheets if necessary)

Applicants: Stephen P.A. FODOR et al.

PAGE 1 of 5

PTO Form 1449

JUN 1 2 2006

Filing Date: October 28, 2003

Group Art Unit: 1634

U.S. PAT	CENT I	DOCL	JMENTS
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	Document No.	Date	Name	Class	Sub-Class	Filing Date
1.	US 2002/0155491	10/24/2002	Fodor et al.			
2.	US 2002/0155492	10/24/2002	Fodor et al.			
3.	US 2002/0192684	12/19/2002	Fodor et al.			
4.	US 2003/0003475	01/02/2003	Fodor et al.			
5.	US 2003/0017484	01/23/2003	Fodor et al.	_		
 6.	US 2003/0104411	06/05/2003	Fodor et al.			
7.	US 2003/0119011	06/23/2003	Fodor et al.			
8.	US 2004/0067521	04/08/2004	Fodor et al.			
9.	US 2005/0112676	05/26/2005	Fodor et al.			
10.	US 2005/0158743	07/21/2005	Fodor et al.			
11.	US 2005/0164249	07/28/2005	Fodor et al.			
12.	US 3,281,860	10/25/1966	Adams et al.	_		
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15.	US 4,159,875	07/03/1979	Hauser			
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30.	US 4,877,965	10/31/1989	Dandliker et al.			
 31.	US 5,139,812	08/18/1992	Lebacq			
 32.	US 5,171,534	12/15/1992	Smith et al.			
 33.	US 5,217,866	06/08/1993	Summerton et al.			
34.	US 5,412,087	05/02/1995	McGall et al.			
35.	US 5,432,099	06/11/1995	Ekins			

Examiner

Date Considered

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Attorney Docket No. Application No. AFFY-003/26US 10/694,541 INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) Applicants: Stephen P.A. FODOR et al. PAGE 2 of 5 PTO Form 1449 Filing Date: October 28, 2003 **Group Art Unit: 1634** U.S. PATENT DOCUMENTS Initial Document No. Date Class Sub-Class Filing Date Name 36. US 5,484,908 01/16/1996 Froehler et al. 37. US 5,556,752 09/17/1996 Lockhart et al. Heller et al. 38. US 5,787,032 07/28/1998 39. US 5,835,404 11/10/1998 Heller et al. 40. US 5,925,525 07/20/1999 Fodor et al. Heller et al. 41. US 6,067,246 05/23/2000 Chetverin et al. 42. US 6,103,463 08/15/2000 43. US 6,140,044 10/31/2000 Besemer et al. US 6,270,961 08/07/2001 Drmanac 44. Fodor et al. 45. US 6,355,432 03/12/2002 US 6,395,491 05/28/2002 Fodor et al. 46. 47. US 6,420,169 07/16/2002 Read et al. 09/17/2002 Fodor et al. 48. US 6.451.536 49. US 6,576,424 06/10/2003 Fodor et al. FOREIGN PATENT DOCUMENTS Document No. Date **Country** Class Sub-Class Translation 50. CA 1248873 01/17/1989 Canada 51. EP 0 171 150 A2 02/12/1986 Europe 52. EP 0 173 339 A2 03/05/1986 Europe 53. EP 0 185 547 A2 06/25/1986 Europe EP 0 225 807 A2 06/16/1987 Europe 55. EP 0 232 967 A2 08/19/1987 Europe EP 0 235 726 A2 09/09/1987 56. Europe 09/16/1987 57. EP 0 237 362 A1 Europe 58. EP 0 237 362 B2 03/11/1992 Europe 59. EP 0 281 927 B1 06/28/1995 Europe 60. EP 0 514 927 11/25/1992 Europe WIPO 61. WO 95/09248 04/06/1995 Date Considered Examiner Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in

conformance and not considered. Include copy of this form with next communication to applicant.

Application No. Attorney Docket No. AFFY-003/26US 10/694,541 INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) Applicants: Stephen P.A. FODOR et al. PAGE 3 of 5 PTO Form 1449 Filing Date: October 28, 2003 **Group Art Unit: 1634** OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) Avers, C.J., "Information Storage and Flow," p. 111, and "Figure 4-13," p.116, in Molecular and Cell Biology, Addison-Wesley Publ. Co., Reading, MA, (1985). Craig, A.G., et al., "Labelling oligonucleotides to high specific activity (I)," Nucl. Acids Res. 17(12):4605-4610, IRL 63. Press, Oxford England (1989). 64. Crkvenjakov et al. "Miniaturization of Sequencing by Hybridization (SBH): A Novel Method For Genome Sequencing" abstract no. P37, DOE/NIH Human Genome Contractors/Grantee Workshop (Nov. 1989) Crkvenjakov et al. "Miniaturization of Sequencing by Hybridization (SBH): The 'Sequencing Chip' Concept" 19 65. pages, (poster). Crkvenjakov, R. and R. Drmanac, "An Integral Approach for Complex Genome Studies," research proposal submitted Office of Health and Environmental Research, U.S. Department of Energy, 54 pages (Oct. 1990) Drmanac, R., et al., "DNA Sequence Determination by Hybridization: A Strategy for Efficient Large-Scale Sequencing," Science 260:1649-1652, American Association for the Advancement of Science, Washington D.C. Drmanac, R., et al., "SBH and the Integration of Complementary Approaches in the Mapping, Sequencing, and 68. Understanding of Complex Genomes," The Second International Conference on Bioinformatics, Supercomputing and Complex Genome Analysis: Proceedings of the June 4-7, 1992 Conference at St. Petersburg Beach, Florida. pp. 121-134, (1993). 69. Drmanac, R., et al., "Prospects For Miniaturized, Simplified And Frugal Human Genome Project: The 'Sequencing Chip' Concept," 10 pages (Oct. 1989). Drmanac, R., et al., "Towards Genome DNA Sequencing Chip Based on Oligonucleotide Hybridization," 2 pages. 70. Drmanac, R., et al., "Sequencing by hybridization: towards an automated sequencing of one million M13 clones 71. arrayed on membranes," Electrophoresis 13:566-573, Verlag Chemie, Weinheim, Germany (1992) Durland, R.H., et al., "Selective binding of pyrido[2,3-d]pyrimidine 2'-deoxyribonucleoside to AT base pairs in antiparallel triple helices," Bioconjugate Chem. 6:278-282, American Chemical Society, Washington, District of Columbia (1995). 73. Elder, J.K., "Analysis of DNA Oligonucleotide Hybridization Data by Maximum Entropy," pp. 363-371, in Maximum Entropy and Bayesian Methods, eds. Mohammad-Djafari and Demoment, Kluwer, Dordrecht, Germany (1992). Elder, J.K., "Image Processing in Nucleic Acid Sequence Analysis," 166 pages, A thesis submitted for the degree of 74. Doctor of Philosophy, University of Oxford (1993) Date Considered Examiner Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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(Use several sheets if necessary)		Applicants: Stephen P.A. FODOR et al. PAGE 4 of 5				
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7	6. Frischauf, A.M., et al., "Lambda phage ver Press, New York, New York (1987).	ctorsEMBL series," Methods in Enzyn	nology 153:103-115., Academic			
7		Hultman, T., et al., "Direct solid phase sequencing of genomic and plasmid DNA using magnetic beads as solid support," Nucl. Acids Res. 17(13):4937-4946, IRL Press, Oxford, England (1989).				
7		Lennon, G.G. and H. Lehrach, "Hybridization analyses of arrayed cDNA libraries," <i>Trends Genet.</i> 47(10) :314-317, Elsevier Science Publishers B.V., Amsterdam, The Netherlands (1991).				
7		Lysov, I.u.P., et al., "A new method for determining the DNA nucleotide sequence by hybridization with oligonucleotides," <i>Doklady Biochem.</i> 303:355-452, Consultants Bureau, New York, New York (1988).				
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8.	2. McBride, L.J., et al., "Automated DNA Se 35(11):2196-2201, American Association					
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Attorney Docket No. Application No. 10/694,541 AFFY-003/26US INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) Applicants: Stephen P.A. FODOR et al. PAGE 5 of 5 PTO Form 1449 Filing Date: October 28, 2003 **Group Art Unit:** 1634 OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) Drmanac, R., et al., "Genome Sequencing Machine," 6 pages, materials from Hyseq, Inc. (publication date unknown). Khrapko, K.R., et al., "A method for DNA sequencing by hybridization with oligonucleotide matrix," DNA Sequence - J. DNA Sequencing and Mapping 1:375-388 (1991). 90. Khrapko, K.R., et al., "Hybridization of DNA with Oligonucleotides Immobilized in Gel: A Convenient Method for Detecting Single Base Substitutions," Molecular Biology 25:581-591 (Dec. 1991) (Russian original volume 25(3) May-Jun. 1991). Kreindlin, E.Y., et al., "A Sequenator for Analysis of Diagnostic and Sequencing Microhips," 2 pages, materials 91. from Hyseq, Inc. (publication date unknown). Lysov, Y.P., et al., "A New Method for Determining the DNA nucleotide Sequence by Hybridization with Oligonucleotides," Doklady Biochemistry 303:436-438 (May 1989) (Russian original volume 303(1-6) Nov.-Dec. 1988). 93. Stodolsky, M., "Sequencing by Hybridization (SBH) R&D at the Center for Genetic Engineering in Belgrade, Yugoslavia: The Radomir Crkvenjakov Laboratory in 1989," 6 pages, internal meeting report (1989). Crkvenjakov, R., "Sequencing of Megabase Plus DNA by Hybridization: Method Development ENT," excerpt from 94. DOE Grant No. DE-FG02-88ER60699, Final Technical Progress Report, 18 pages (1990). 95. 96. 97. 98. 99. 100. Date Considered Examiner Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.